

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A solid-state imaging device, comprising:

an image pickup unit having unit cells including opto-electrical converter elements, said unit cells being disposed in a two-dimensional array,

a selection line made of polysilicon for selectively determining the unit cells in the same row within the image pickup unit,

a read-out line made of polysilicon for reading out an electric charge accumulated in the opto-electrical converter elements of the unit cells in the same row within the image pickup unit,

a signal line transmitting pixel signals produced from the unit cells in the same row within the image pickup unit,

a reset line made of polysilicon for discharging the unit cells in the same row within the image pickup unit down to ~~the~~ a desired voltage level,

a driver circuit located on one side of the image pickup unit for supplying drive signals to the read-out line, the selection line, and the reset line, respectively, and

a read-out auxiliary wiring disposed along at least the read-out line and electrically connected to the read-out line at a plurality of junctions, the read-out auxiliary wiring being of ~~relatively~~ comparatively lower electric resistivity than the read-out line.

2. (Currently Amended) The solid-state imaging device according to claim 1, wherein the read-out auxiliary wiring is juxtaposed with the read-out line almost throughout its full ~~extension~~ length.

3. (Original) The solid-state imaging device according to claim 1, wherein the read-out auxiliary wiring is provided above the read-out line with an interlayer insulation film interposed therebetween.

4. (Original) The solid-state imaging device according to claim 1, wherein the read-out auxiliary wiring is connected to the read-out line at external lateral opposite sides of the image pickup unit, respectively.

5. (Original) The solid-state imaging device according to claim 1, wherein the read-out auxiliary wiring is made of metal primarily consisting of aluminum.

6. (Currently Amended) The solid-state imaging device according to claim 1, further comprising a reset auxiliary wiring, the reset auxiliary wiring being disposed along the reset line and electrically connected to the reset line, the reset auxiliary wiring being of ~~relatively~~ comparatively lower electric resistivity than the reset line.

7. (Original) The solid-state imaging device according to claim 1, wherein the reset auxiliary wiring is made of metal primarily consisting of aluminum.

8. (Currently Amended) The solid-state imaging device according to claim 1, further comprising a selection auxiliary wiring, the selection auxiliary wiring being disposed along the selection line and electrically connected to the selection line, the selection auxiliary wiring being of ~~relatively~~ comparatively lower electrical resistivity than the selection line.

9. (Original) The solid-state imaging device according to claim 1, wherein the selection auxiliary wiring is made of metal primarily consisting of aluminum.

10. (Original) The solid-state imaging device according to claim 1, wherein said read-out line, said reset line, said selection line and said read-out auxiliary wiring are provided in the same layer.

11. (original) The solid-state imaging device according to claim 1, wherein said signal line is provided in a layer which is different from that in which said read-out auxiliary wiring is provided.

12. (Currently Amended) A solid-state imaging device, comprising:

an image pickup unit having unit cells including first and second opto-electrical converter elements, said unit cells being disposed in a two-dimensional array,

a selection line made of polysilicon for selectively determining the unit cells in the same row within the image pickup unit,

first and second read-out lines made of polysilicon for reading out an electric charge accumulated in the first and second opto-electrical converter elements of the unit cells in the same row within the image pickup unit,

a signal line transmitting pixel signals produced from the unit cells in the same row within the image pickup unit,

a reset line made of polysilicon for discharging the unit cells in the same row within the image pickup unit down to the a desired voltage level,

a driver circuit located on one side of the image pickup unit for supplying drive signals to the first and second read-out lines, the selection line, and the reset line, respectively,

first and second read-out auxiliary wirings disposed along at least the first and second read-out lines, respectively, and electrically connected to the first and second read-out lines, respectively, the first and second read-out auxiliary wirings being of ~~relatively~~ comparatively lower electric resistivity than the first and second read-out lines, respectively.

13. (Currently Amended) The solid-state imaging device according to claim 12, further comprising a reset auxiliary wiring and a selection auxiliary wiring, the reset auxiliary

wiring and the selection auxiliary wiring being disposed along the reset line and the selection line, respectively, and electrically connected to the reset line and the selection line, respectively, at a plurality of junctions, respectively, the reset auxiliary wiring and the selection wiring being of relatively comparatively lower electric resistivity than the reset line and the selection line, respectively.

14. (Original) The solid-state imaging device according to claim 13, wherein any pair of two activating lines of the first and second read-out lines, the reset line, and the selection line are disposed laterally symmetrical about the first opto-electrical converter element while another pair of the remaining lines are disposed laterally symmetrical about the second opto-electrical converter element.

15. (Original) The solid-state imaging device according to claim 14, wherein the first and second read-out auxiliary wiring, the reset auxiliary wiring, and the selection auxiliary wiring are all located in the same layer.

16. (Original) The solid-state imaging device according to claim 12, wherein said read-out line, said reset line, said selection line and said read-out auxiliary wiring are provided in the same layer.

17. (Original) The solid-state imaging device according to claim 12, wherein said signal line is provided in a layer which is different from that in which said read-out auxiliary wiring is provided.

18. (Currently Amended) A solid-state imaging device, comprising:

an image pickup unit having unit cells including opto-electrical converter elements, and a sensing unit to detect charges accumulated in the ~~opt-electrical~~ opto-electrical converter elements, said unit cells being disposed in a two-dimensional array,

a selection line made of polysilicon for selectively determining the unit cells in the same row within the image pickup unit,

a read-out line made of polysilicon for reading out an electric charge accumulated in the opto-electrical converter

elements of the unit cells in the same row within the image pickup unit,

a signal line transmitting pixel signals produced from the unit cells in the same row within the image pickup unit,

a reset line made of polysilicon for discharging the unit cells in the same row within the image pickup unit down to the a desired voltage level,

a driver circuit located on one side of the image pickup unit for supplying drive signals to the read-out line, the selection line, and the reset line, respectively, and

a read-out auxiliary wiring disposed along at least the read-out line and electrically connected to the read-out line at a plurality of junctions, the read-out auxiliary wiring being of ~~relatively~~ comparatively lower electric resistivity than the read-out line;

said reset line and said read-out line being symmetrical about a sensing unit interpolated at their respective extensions of centers, and said read-out line and said selection line being symmetrical about the opto-electrical converter elements.

19. (Original) The solid-state imaging device according to claim 18, wherein the read-out auxiliary wiring is



connected to the read-out line at external lateral opposite sides of the image pickup unit, respectively.

20. (Original) The solid-state imaging device according to claim 18, further comprising a reset auxiliary wiring and a selection auxiliary wiring, the reset auxiliary wiring and the selection auxiliary wiring being disposed along the reset line and the selection line, respectively, and electrically connected to the reset line and the selection line, respectively, at a plurality of junctions, respectively, the reset auxiliary wiring and the selection wiring being of relatively lower electric resistivity than the reset line and the selection line, respectively.

Application No. R0/669,421

Reply to Office Action of September 28, 2004

IN THE ABSTRACT OF THE DISCLOSURE

Page 18, lines 1-28, delete in their entirety and substitute therefore the following new  
Abstract of the Disclosure on the page attached hereto.